WHAT IS CLAIMED IS:

1. A method for producing a hollow multistrand or hollow coalesced strand foam article comprising:

a. providing a foamable composition comprising a blowing agent composition and at least one film-forming composition, the foamable composition being in a gel state;

b. extruding the foamable composition through a die having a plurality of first orifices, each of which yields a hollow extrudate;

c. converting the hollow extrudate into foamed hollow extrudate strands at a temperature that promotes foam bubble stability; and

d. allowing the foamed hollow extrudate strands to contact each other while such strands retain at least some surface tackiness in order to effect adhesion between adjacent individual strands and yield a hollow multistrand foam extrudate.

2. The method of Claim 1, wherein the blowing agent composition comprises at least one blowing agent selected from carbon dioxide, nitrogen, a nitrous oxide, a noble gas, air, a hydrocarbon, an ether, a lower (1 to 6 carbon atoms) alcohol, a partially halogenated hydrocarbon, ammonia, water and mixtures or two or more of such blowing agents.

3. The method of Claim 2, wherein the die also comprises a plurality of second orifices that yield a solid extrudate whereby step b yields a combination of solid foam extrudates and hollow foam extrudates and step d yields a multistrand foam extrudate that comprises both solid foam extrudate strands and hollow foam extrudate strands.

4. The method of Claim 3, wherein solid foam extrudate strands form one part of the multistrand foam extrudate and the hollow foam extrudate strands form a second part of the multistrand foam extrudate, the presence of both hollow and solid foam strands constituting a composite cellular foamed structure.

5. The method of Claim 1, wherein the film-forming composition comprises polystyrene and, optionally, ethylene/styrene interpolymer, and the method further comprises sequential step e. exposing the hollow multistrand foam extrudate to steam for a period

of time sufficient to reduce foam density below that of the as-foamed hollow extrudate strands.

6. The method of Claim 1, wherein the film-forming composition comprises a polymer with a glass transition temperature near the temperature of steam (nominally 100°C at atmospheric pressure).

7. The method of Claim 1, wherein the temperature of step c. is above the polymer's glass transition temperature (T_g), or for those having sufficient crystallinity to have a melt temperature (T_m), near the T_m.

8. An extrusion die for processing foamable polymer compositions, the die comprising a solid body having a first major planar surface and a spaced apart, substantially parallel second major planar surface, the body having defined therein a molten polymer receiving cavity having an open end where it intersects the second major planar surface and a closed end disposed between the first and second major planar surfaces, the first major planar surface having defined therein at least two sets of first apertures that are in fluid communication with the molten polymer receiving cavity and the first major planar surface, each first aperture set being spaced apart from other first aperture sets with each aperture of a set having a shape that forms a segment of a complete, hollow geometric shape and all apertures in a single set being spaced apart from each other, but arranged in a manner sufficient to approximate the complete geometric shape.

9. The die of Claim 8, further comprising at least two second apertures, the second apertures being defined in the first major planar surface and in fluid communication with the molten polymer receiving cavity, the second apertures also being spaced apart from the sets of first apertures.

10. The die of Claim 9, further comprising a plurality of third apertures, the third apertures being defined in the first major planar surface and in fluid communication with both a source of a fluid medium, blowing agent or other component and the first major planar surface, each third aperture being defined in said first major planar surface at a point within the complete hollow geometric shape formed by a first aperture set of the die embodied in Fig. 2 or that

end of the pin furthest from the closed end of the cavity defined in the first body segment, whichever is appropriate.

11. A two piece extrusion die for processing foamable polymer compositions, the die comprising a first solid body segment and a second solid body segment; the first solid body segment having a first major planar surface and a spaced apart, substantially parallel second major planar surface, the first body segment having defined therein a foamable composition receiving and distribution cavity, the cavity having an open end where it intersects the second major planar surface and a closed end disposed between the first and second major planar surfaces, the first body segment also having attached thereto a plurality of pins that begin at the closed end of the cavity and extend beyond the open end of the cavity; the second body segment having a first major planar surface and a spaced apart, substantially parallel second major planar surface, the second body segment having defined therein a plurality of spaced apart first apertures that are in fluid communication with both the first and second major planar surfaces; the first and second solid body segments, when assembled with the second major planar surface of the first segment proximate to the first major planar surface of the second segment, cooperating to provide a plurality of die gaps, the die gaps being formed by combinations of pins from the first body segment and the first apertures of the second body segment, the die gaps providing a fluid flow path from the foamable composition receiving and distribution cavity to the second major planar surface of the second segment.

12. The die of Claim 11, further comprising at least two second apertures, the second apertures being defined in the second die segment and in fluid communication with both major planar surfaces of said second die segment, the second apertures being spaced apart from the first apertures.

13. The die of Claim 11, further comprising a plurality of third apertures, each third aperture being defined in a pin in such a manner as to be in fluid communication with both that end of the pin proximate to the second major planar surface of the second segment and a source of a fluid medium, blowing agent or other component and the first major planar surface.

14. A cellular foam structure comprising a plurality of coalesced, hollow extruded strands.

15. The structure of Claim 14, wherein the foam comprises at least one film-forming material selected from olefin homopolymers, olefin copolymers, alkylene aromatic polymers and copolymers, polyesters and copolymers, polycarbonates, polyamides, polyimides, halogenated olefin polymers and copolymers, natural polymers, proteins, polysaccharides, thermoplastic polyurethanes, and blends of polystyrene and ethylene/styrene interpolymer.

16. The structure of Claim 14 wherein the strands have different polymeric compositions.

17. The structure of Claim 14, wherein the foam has a closed cell content, as determined in accordance with ASTM D-2856A, of greater than 50 percent, based on total number of cells, not including interstitial channels or voids between foam strands or channels within the hollow strands that form at least part of the foam structures.

18. The structure of Claim 14, wherein the foam has an open cell content, as determined in accordance with ASTM D-2856A, of greater than 50 percent, based on total number of cells, not including interstitial channels or voids between foam strands or channels within the hollow strands that form at least part of the foam structures.

19. The structure of Claim 14, further comprising a plurality of solid foamed strands.

20. The structure of Claim 15, wherein the film-forming material is a cross-linkable polyol-isocyanate blend and the foam further comprises at least one cross-link promoter such that the structure, following exposure to cross-linking conditions, is a thermoset structure.

21. The structure of Claim 14, wherein foamed portions of the structure have a foam density within a range of from 0.35 to 60 pounds per cubic foot (6 to 960 kilograms per cubic meter).

22. An article of manufacture fabricated, at least in part, from the foam structure of Claim 14, wherein the article is selected from the group consisting of sound insulation structures, thermal insulation structures, energy absorbing structures, packaging structures, cavity filling structures, air distribution structures,

filter structures, impact energy management structures, surface leveling structures, fluid and gas absorption and retention structures, object supporting structures, bedding structures, integrated building structures and geophysical structures.

23. An article of manufacture fabricated, at least in part, from the foam structure of Claim 19, wherein the article is selected from the group consisting of sound insulation structures, thermal insulation structures, energy absorbing structures, packaging structures, cavity filling structures, air distribution structures, filter structures, impact energy management structures, surface leveling structures, fluid and gas absorption and retention structures, object supporting structures, bedding structures, integrated building structures and geophysical structures.

24. The structure of Claim 14 further comprising a facing material selected from the group consisting of gypsum board, cementitious board, plywood and oriented strand board, the facing material being adhered to at least an external surface portion of the coalesced, hollow extruded strands.